RANDOM SAMPLES

edited by ELIZABETH PENNISI

Rampaging Rabbit Virus—Again

Two years ago, a virus being field tested to reduce Australia's enormous rabbit population escaped from the test site (*Science*, 27 October 1995, p. 583). It has been killing rabbits by the millions ever since. Now the rabbit calicivirus is loose in New Zealand, even though that country's Ministry of Agriculture (MAF) had decided not to use it to control rabbit populations. Officials suspect the virus may have been released intentionally.

In July, the MAF announced that not enough was known about the virus to put it into the field (*Science*, 18 July, p. 321). But last week, officials confirmed that several dead rabbits on a farm near Cromwell, on the South Island, tested positive for the virus. Up to 100 other properties now appear to have infected rabbits.

Initially, authorities had quarantined affected areas and intensified their monitoring of new outbreaks, including searches for dead rabbits by helicopter. Police set up roadblocks near Cromwell and imposed a no-fly zone by the airport to block the spread of the virus. But by the week's end, the virus had spread across hundreds of miles, making containment and eradication impossible.

Outbreak. Virus-killed rabbits were found near Cromwell, New Zealand.

New Zealand's Chief Veterinary Officer, Barry O'Neil, believes the New Zealand outbreak is no accident. "This is not the work of an insect vector," he says. "It's the wrong time of year; there's snow on the ground." He also notes that the outbreak occurred in rabbit-infested country, and that rabbits across a wide area appear to have been infected at about the same time.

O'Neil says there were rumors among farmers that the virus was introduced a week before the first dead rabbits were discovered. South Island farmers have been angry at the MAF's decision not to use the virus. New Zealand's Biosecurity Act stipulates heavy penalties for the deliberate introduction of an unwanted organism.

Immune Gene Tied to Alzheimer's

For years, researchers trying to sort out the causes of Alzheimer's disease have struggled to understand why some people start losing their memory years earlier than others. Five years ago, neurobiologists linked a particular genetic variant called *APOE4* to accelerated development of Alzheimer's. Now another team has found that a variant of an immune system gene can also hasten the disease's onset. Patients with this variant, called *HLA-A2*, tend to lose their memory 3 to 7 years earlier than do people without it, reports geneticist Haydeh Payami at Oregon Health Sciences University in Portland.

Because earlier findings had suggested a connection between Alzheimer's disease and the HLA-A2 protein, which triggers immune activity, Payami and her colleagues had looked for HLA-A2 in 111 Alzheimer's patients. The HLA-A2 protein is present in about 83% of the people who first showed signs of memory loss before age 50—a percentage about twice that in the general population, her team reports in the current *Neurology*. A follow-up study of 96 other patients with Alzheimer's disease confirmed this finding.

Although Payami cautions that another gene very close to *HLA-A2*, and not *HLA-A2* itself, could be at fault, the result, if verified, supports the idea that the immune system damages nerve cells in Alzheimer's patients. These inflammatory reactions are "becoming an area of great interest" to researchers, says Zaven Khachaturian, a neurobiologist who works with the Chicago-based Alzheimer's Association.

The High Cost of a Right Answer

The saga of a Korean mathematics professor, who says he was dismissed after pointing out a mistake made by his superiors, is causing a minor furor in mathematics circles worldwide.

Myong Ho Kim, 40, was an assistant professor of mathematics at Sungkyunkwan University in Seoul when he found an error in a math problem in the university's entrance examination. The problem: Three nonzero vectors A, B, and C in three-dimensional Euclidean space satisfy the following inequality: $||xA + yB + zC||$ greater than or equal to $||xA|| + ||yB||$ for all real numbers x, y, and z. Show that the three vectors are perpendicular to each other.

Myong Ho Kim

Kim pointed out—correctly, mathematicians say—that no three nonzero vectors satisfying the hypothesis exist, and proposed that the question be disregarded in scoring the exam. No changes were made; instead, Kim was denied a promotion and let go in February 1996.

University officials say Kim didn't meet promotion requirements. Kim, claiming his dismissal was retaliation, sued. But the courts ruled against him after both the Korean Mathematical Society and the Korea Institute for Advanced Study declined to come to his defense.

Kim has appealed to Korea's supreme court—and the court of international opinion. Eminent mathematicians, including Michael Atiyah at Cambridge University, have taken up his cause, as have Korean-American scientists. And Kim, now an unpaid research assistant at the University of California, Santa Cruz, vows to keep up his fight. "I want to show young Korean scholars there is justice alive in Korea," he says.

Physicist Serves Up Tennis Secret

Tennis professionals spend years on the court developing a powerful serve. Now an Australian physicist has unlocked their secret: The best place for an effective serve is at a "dead spot" near the tip of the racket.

Rod Cross, a plasma fusion physicist at the University of Sydney and 50-year tennis veteran, brought his racket into the lab to search for its sweet spot—the supposed place that will send a ball back over the net with utmost oomph. Instead, he discovered a spot between the center and the tip of the racket that is most efficient at transferring the momentum of a moving racket to a stationary ball.

But what's good for a serve is bad for a ground volley. At the dead spot, it turns out, the ball loses much more of its momentum to the racket than if hit elsewhere. "It's like dropping a ball of putty," he says. "The ball just stops."

Cross's research appears in the current issue of the *American Journal of Physics*. The work, says Howard Brody, a University of Pennsylvania physicist and author of the book *Tennis Science for Tennis Players*, provides a theoretical spin to something that most players learn through trial and error.